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General - Water pollution

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THE POSITION OF THE FOOD AND AGRICULTURE ORGANIZATION WITH RESPECT TO WATER POLLUTION CONTROL

Prepared by

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, June 1963

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SAST	Data concerning certain species and fish stocks.
MAST	Information on methods and subjects.
OT	Oceanographic data.
IT	Limnological data.
	and
CART	Information concerning fisheries and resources of certain countries and regions (FID/S).

Des catégories spéciales de synopses sont identifiées à l'aide de symboles suivis des chiffres de classification basés sur le code d'indexation de la "Current Bibliography":

SAST	Données sur certaines espèces et populations de poissons.
MAST	Renseignements sur des méthodes et des sujets.
OT	Données océanographiques.
IT	Données limnologiques.
	et
CART	Renseignements sur les pêcheries et les ressources de certains pays et régions (FID/S).

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SAST	Datos relativos a ciertas especies y poblaciones.
MAST	Sinopsis sobre métodos y materias.
OT	Sinopsis sobre oceanografía.
IT	Sinopsis sobre limnología.
	y
CART	Información sobre los recursos acuáticos vivos de algunos países y regiones (FID/S).

FAO Fisheries Biology Technical Paper FB/T (No.)

Special groups of Technical Papers are identified by:

RE	Indexed lists of experts and institutions drawn from Registers maintained by Biology Branch
CB	Lists of Periodicals, special sections of "Current Bibliography for Aquatic Sciences and Fisheries", special bibliographies and papers concerning documentation problems.
MFS	Provisional editions of "FAO Manuals in Fisheries Science".

Some documents also have another identification, if, for example, they have been contributed to a meeting for which papers have been numbered according to another system.

Des catégories spéciales de documents techniques sont identifiées à l'aide des symboles suivants:

RE	Listes indexées d'experts et institutions tirées des registres tenus à jour par la Sous-division de la Biologie.
CB	Listes de périodiques, des sections spéciales de la "Current Bibliography for Aquatic Sciences and Fisheries", des bibliographies particulières et des articles sur les problèmes de documentation.
MFS	Editions provisoires des "Manuels FAO de la science des pêches".

Il arrive que certains documents portent d'autres numéros d'identification, comme c'est le cas s'ils ont été préparés pour une réunion dont les documents ont été marqués à l'aide d'un autre système.

Grupos especiales de documentos técnicos se identifican por las siglas siguientes:

RE	Listas índices de expertos y de instituciones tomadas de los registros que se llevan en la Subdirección de Biología.
CB	Listas de periódicos, secciones especiales de la "Current Bibliography for Aquatic Sciences and Fisheries", bibliografías especiales y trabajos relativos a los problemas de documentación.
MFS	Ediciones provisionales de los "Manuales FAO de la Ciencia de la Pesca".

Algunos documentos tienen también otra identificación si, por ejemplo, son contribuciones a una reunión cuyos documentos han sido marcados con arreglo a otros sistemas.

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FAO Fisheries Biology Technical Paper No. 34 FB/T34
(Distribution restricted) General - Water pollution

THE POSITION OF THE FOOD AND AGRICULTURE ORGANIZATION WITH RESPECT TO WATER POLLUTION CONTROL

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Rome, June 1963

PREPARATION OF THIS DOCUMENT

This document, a revision of Dill (1961), has been prepared to meet repeated requests for information on the policy and program of FAO with respect to the study and control of water pollution.

Aid in its preparation has been given by the Atomic Energy Branch, Legislation Research Branch, and the following Divisions of FAO:

Animal Production and Health
Fisheries
Forestry
Land and Water Development
Nutrition
Plant Production and Protection

Distribution:

FAO Technical Department
FAO Technical Divisions
FAO Program Liaison Division
FAO Atomic Energy Branch
FAO Legislation Research Branch
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ECA, ECE, EIFAC, GFCM, IAEA, IMCO, IPFC, IUCN, OECD
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"Current Bibliography" Entry:

Dill, W.A. (1963) 8-04026 MF
FAO Fish.Biol.tech.Pap., (34):8 p.
The position of the Food and Agriculture Organization with respect to water pollution control

NE 62-03003. Describes the functions of FAO, its concern with water pollution, and its activities in this field, incl. its collaboration with other agencies, and the activities of its regional fisheries councils and commissions. Contains a list of pertinent references.

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1. Functions of FAO

The functions of the Food and Agriculture Organization of the United Nations (FAO), by constitutional definition, include the collection, analysis, interpretation and dissemination of information relating to nutrition, food and agriculture - including fisheries, marine products, forestry and primary forestry products. They also include the promotion and recommendation of national action with respect to research, education and the conservation of natural resources (which include good land and water use) with respect to food and agriculture.

2. Its Concern with Water Pollution

As a consequence, the Organization is concerned generally with the question of water pollution in that it may, directly or indirectly, affect adversely the production, processing, distribution and consumption of many food or agricultural products.

FAO is specifically concerned with the effects of pollution on surface water sources and groundwater storage and the effect of a polluted water supply upon irrigation and soils.

It has a specific interest in pollution in as far as it may have a harmful effect on the natural aquatic environment from which fish stocks derive, the fish stocks themselves, and hence ultimately the harvest of food. It is specifically concerned with the effects which pollution may have upon fishery products through spoilage of flavor and keeping, nutritional and sanitary qualities.

It is concerned with its adverse effects on navigation, especially as it may affect fishing boats or harbors, and on fishing gear.

It has a specific interest in the quality of water for domestic use or for stockwatering. It has a specific concern with the quality of water for industrial use - as for food processing. Furthermore, FAO has a decided interest in seeing that the industries associated with food, agriculture, forestry and fisheries are not in themselves sources of pollution and that measures are taken at the source to minimize the effects of any of their practices which may contribute to water pollution.

A further aspect of FAO's growing interest is in the use of industrial and town sewage water for irrigation purposes, especially in those areas where there is a shortage of surface and underground water. This undertaking meets the need for water, avoids increasing pollution and contributes to the replenishment of groundwater storage.

Among the very specialized aspects of FAO's interest are those concerning pollution of the sea by oil, pollution of surface water and underground storage by oil, and pollution of both marine and fresh waters by radioactive wastes.

In short, FAO has an interest in maintaining the quality of water for all the uses associated with food, agriculture, forestry and fisheries and feels that prevention and control of water pollution are the basic steps towards that end.

The Organization's activities with respect to all these interests are summarized below. Past and present activities in this respect have been confined only by budgetary considerations.

3. The Activities of the Organization in this field

In its concern with the problems enumerated above, the interest of the Organization obviously coincides - either wholly or in part - with the interests of many other agencies.

As a consequence, a large amount of the Organization's work in this field is and will continue to be done in collaboration with others. This survey of activities may well begin, therefore, with reviews of FAO's collaboration with other agencies and organizations.

3.1 Collaboration with the United Nations and its Agencies

.11 UN Inter-Agency Meetings

General cooperation and progress in the study of water pollution problems is reviewed annually at the UN Inter-Agency Meetings on Water Resources Control and Utilization in conformity with the Economic and Social Council's Resolution 675 (XXV) stressing the importance of the subject and the need for concentrated action in the

Programs in collaboration with individual UN agencies are described below.

.12 Collaboration with ECE and WHO

Since 1957 there has been a very close collaboration with the Economic Commission for Europe (ECE) and the World Health Organization (WHO) with respect to European water pollution problems.

FAO has participated in many inter-secretariat meetings with these sister organizations, where it has shared in the preparation of several major studies on the subject, including "A Study on Water Pollution Control Problems in Europe" (ECE Thirteenth Session, 1958) and "Tentative Suggestions for the Establishment of International River Pollution Control Bodies in Europe" (ECE/FAO/WHO, 1958). It has contributed to a compendium of documentation on water pollution control in Europe compiled by ECE (ECE, 1962). Among these latter contributions are lists of experts and agencies concerned with water pollution, abstracting journals in the field, and sources of information on the legal aspects of water pollution.

In 1961, it was one of the sponsors of the Conference on Water Pollution Problems in Europe, convened by the ECE in Geneva and held under the joint auspices of ECE, the Regional Office for Europe of WHO, FAO, and the International Atomic Energy Agency (IAEA). This was the largest conference on water pollution problems ever held in Europe. The papers resulting from it contain some excellent reviews, and the Report of the Conference itself constitutes a considerable review by the representatives of 25 nations of the entire question of water pollution in Europe (UN, 1961).

FAO and WHO have also made "A Contribution to the UN Scientific Committee on the Effects of Atomic Radiation /UNSCEAR/ on the Specific Questions Concerned with the Oceanography and Marine Biology in Respect to the Disposal of Radioactive Wastes" (FAO (Fisheries Division) and WHO, 1957). See also section 3.15 for further work with WHO (and UNESCO) in this field.

.13 Collaboration with IAEA

In 1959 the IAEA and the United Nations Educational; Scientific and Cultural Organization (UNESCO) sponsored and organized with the co-operation of FAO the Scientific Conference on the Disposal of Radioactive Wastes. Held in Monaco, it was attended by 283 scientists representing 31 countries and 11 international organizations. The Proceedings of the Conference were published as IAEA (1960).

With special reference to the disposal of radioactive waste in the aquatic environment, the Fisheries Division of FAO participated in the work of two ad hoc panels of IAEA meeting during the 1958-1961 period. The report of the first group, the Panel on Radioactive Waste Disposal into the Sea, has been issued as IAEA (1961), and that of the Panel on Radioactive Waste Disposal into Fresh Water as IAEA (1963)

The Fisheries Division has also participated in the IAEA's Panel on the Monitoring of Radioactive Wastes in the Sea.

The Legislation Research Branch has been participating in the work of the IAEA Panel on the Legal Implications of Disposal of Radioactive Waste into the Sea during the 1960-1963 period. In the course of this work the Branch has collaborated with the Legal Division of IAEA in the preparation of a study on national legislation on control of disposal of radioactive waste into the sea. (See: IAEA Secretariat, 1961)

Cooperation is also maintained between the IAEA's Research Project in Monaco on the Effects of Radioactivity in the Sea and the FAO Fisheries Division.

Bibliographic information and aid in studying the movements of marine organisms which may transport radioactive substances are furnished by FAO.

.14 Collaboration with IMCO

Close contact has been maintained with the Intergovernmental Maritime Consultative Organisation (IMCO) which, with respect to water pollution, has been entrusted to study questions related to the implementation of the Convention on the Prevention of Pollution of the Sea by Oil.

.15 Collaboration with UNESCO

Collaboration with UNESCO at the Monaco conference in 1959 has already been mentioned under section 3.13.

It may further be noted that the material in the report cited as FAO (Fisheries Division) and WHO (1957) was combined with a report by UNESCO and submitted to UNSCEAR as Appendix B of UNESCO/FAO/WHO Report on Sea and Ocean Disposal of Radio-active Wastes, November 1957.

3.2 Collaboration with OECD

FAO exchanges information on water pollution studies with the Organisation for Economic Co-operation and Development (OECD) and has assisted it in planning its international inventory of laboratories concerned with scientific research in water pollution.

3.3 Collaboration with IUCN

The Organization has assisted the International Union for the Conservation of Nature and Natural Resources (IUCN) in the organization of a symposium in 1958 in which the effects of pollution on natural aquatic resources received a considerable share of attention. The papers presented at this symposium were published with the aid of a financial contribution from FAO (IUCN/FAO, 1960).

3.4 Cooperation with European Commission on Agriculture

The Land and Water Development Division of FAO has performed Secretariat functions for the Sub-Commission on Land and Water Use (SCOLAW) of the European Commission on Agriculture (ECA) for a study of the agricultural aspects for the "Protection of Water Resources for Agriculture against Pollution and Misuse".

This study was agreed upon at the Third Session of the Sub-Commission in Istanbul in 1959. Rapporteurs were appointed to assemble and evaluate information on this problem for northern and southern Europe. Their reports were submitted to the Fourth Session of the Sub-Commission , Tel-Aviv, 1961, and the two reports have since been combined and published by FAO as: van der Kerk, et al (1962).

The Legislation Research Branch (in collaboration with the Land and Water Development Division) has also completed a study on groundwater legislation in Europe including legal provisions for the prevention of the pollution of such waters. This report was submitted as a working paper to the Fifth Session of the Sub-Commission on Land and Water Use, Madrid, March 1963. (FAO, Legislation Research Branch, 1963.) The report is being prepared for publication.

The Sub-Commission on Land and Water Use was terminated at the 13th session of ECA in March 1963.

Collaboration with ECA will continue through the newly-established Working Party on Water Resources and Irrigation.

3.5 Direct Activities of its Regional Fisheries Councils and Commissions 1/

.51 European Inland Fisheries Advisory Commission (EIFAC)

The membership of this organization consists of 18 countries of Europe. The First Session, Dublin, 1960, selected the subject of "water pollution study and control" as as one of the most pressing and universal problems to be considered by EIFAC.

At its Second Session, Paris, May 1962, the Commission took note of a recommendation of the Conference on Water Pollution Problems in Europe, 1961, that EIFAC take the initiative in drawing up water quality requirements with respect to fisheries. The Commission agreed that the proper management of a river system demands that water of suitable quality be provided for each use that is made or intended to be made of it

1/ The membership of these councils and commissions consists of governments; the secretariat is provided and appointed by FAO.

and that the attainment and maintenance of such quality is normally to be sought through the control of pollution. It is necessary, therefore, to know the standards of quality required for each particular use in order to determine the degree of pollution control necessary and to forecast the probable effect of augmented or new discharges of effluents.

It was therefore agreed that the establishment of water quality criteria for European freshwater fishes be undertaken by the Commission. A convenor was appointed and a working party is being established for this purpose.

.52 General Fisheries Council for the Mediterranean (GFCM)

The seat of this Council is in Europe; its membership includes 13 countries. It is through its Inland Water Committee that the GFCM deals with the problem of water pollution. It has been studying several aspects of the problem since 1953 and is now continuing the program of work in this field adopted at its Fourth Session (September 1956), which consists of studies of general processes for purifying waters containing organic wastes, and the program decided upon at its Fifth Session (October 1960), which includes in addition attention to the detrimental action of detergents.

.53 Indo-Pacific Fisheries Council (IPFC)

The membership of this organization includes 16 countries in Asia and the Far East.

This Council took cognizance of the problem of pollution of inland waters at its Third Session in 1961, and studies of the problem have since received its considerable attention.

In 1959 the 29th Executive Committee Meeting of the IPFC, Hong Kong, requested a bibliography and review of existing work and publications concerning radioactivity of marine fish caught in Pacific waters. In response to this request, a paper was prepared by FAO on radioactivity in the Indo-Pacific Ocean (Laevastu, 1960).

3.6 Special studies, Reviews and Meetings

In addition to the special studies, reviews, meetings, seminars, etc., with respect to water pollution carried on in collaboration with or at the request of other organizations, FAO carries on certain activities of this nature on a more independent basis. Some examples follow:

(i) In 1959 an FAO ad hoc Expert Committee on Radioactive Materials in Food and Agriculture met in Rome:

(a) "to review present knowledge of the behavior of radioactive substances in terrestrial and aquatic food chains, including their levels in foods and agricultural materials, and practices which affect the radioactive contamination of human diets;

(b) to indicate possible improvements in surveys of radioactive substances in foods and agricultural materials;

(c) to make recommendations regarding research on food chains needed to further the understanding and reduction of the radioactive contamination of the diet of man."

As a part of this study, the radioactive contamination of both marine and freshwater bodies was reviewed.

The Committee's conclusions were published in the FAO Atomic Energy Series (FAO Expert Committee, 1960).

(ii) Another paper reviewing the data on natural background radioactivity in the sea, the possible fate of artificial radioactive substances, and the uptake, accumulation and loss of radioactive substances by various links in the marine food chain was prepared by FAO for submission at the "Giornata Nucleare", Palermo, 1961. (See: FAO, Fisheries Division, Biology Branch, 1961.)

(iii) The Legislation Research Branch has prepared an annotated list of legislation on water pollution in the various European countries and, with the collaboration of the Legal Division of IAEA, a note on legislation in Europe relating to the pollution of water by radioactive substances. (See, respectively, FAO Secretariat, Rural Legislation Branch (1961) and FAO Secretariat, Legislation Branch and IAEA Secretariat Legal Division (1961).)

(iv) The Fisheries Division of FAO is in the process of compiling reviews of the status of inland fisheries throughout the world, and, as a part of these reviews, the subject of water pollution is treated.

3.7 Continuing Services

As a part of its Regular Program, the Organization provides information with respect to water pollution to its member countries in a variety of ways.

(i) Registers of experts

The Land and Water Development Division has a permanent (unpublished) register of experts qualified to deal with problems of water pollution.

The Biology Branch of the Fisheries Division also maintains a permanent (unpublished) "Register of Experts in Fisheries Science" and allied fields which include the investigation and control of water pollution.

(ii) Directories

The Organization has published four directories of fisheries institutions in: North and South America, Europe, Asia and the Far East, and Africa.[1] Supplementing these and helping to keep them up to date, the Biology Branch of the Fisheries Division also maintains a world-wide (unpublished) Register of Institutions in Fisheries Science. All of these directories and the Register include institutions which carry out work concerned with the effect of water pollution on fisheries.

(iii) Documentation and bibliographies

(a) Legislation - Texts of laws and regulations and references to water pollution control legislation are included in the FAO publications: Food and Agricultural Legislation (quarterly), and Monthly Legislative Report.

(b) Technical literature - In 1958 the Organization commenced publication of what is now known as Current Bibliography for Aquatic Sciences and Fisheries issued at monthly intervals. While this publication does not attempt the comprehensive coverage of Water Pollution Abstracts in the field of water pollution (for example, engineering and financial aspects are generally omitted) it attempts to list and index most current articles dealing with the biological aspects of water pollution on aquatic life.[2]

(iv) In addition to these routine services, ad hoc advice on water pollution problems is furnished to member governments as requested. For example, advice on water pollution control legislation may be given by the Legislation Research Branch.

3.8 Direct Technical Assistance and Training

Finally, the Organization can provide field assistance to member countries and aid in the training their workers.

(i) Technical Assistance Experts

Under the Expanded Program of Technical Assistance (EPTA) of the United Nations, the Organization is able to furnish experts in the field of water pollution study or control to advise and assist its member governments.

1/ See: Howard and Godfrey (1950), FAO (1955-57), IPFC Secretariat (1957), and Secretariat of the Regional Fisheries Commission for Western Africa (1962).

2/ The Current Bibliography ..... also lists papers on the legal aspects of water pollution legislation which have specific reference to aquatic resources and includes lists of meetings on water pollution.

(ii) Fellowships

Several fellowships have been granted, using EPTA funds, to enable candidates from member countries of FAO to study water pollution control, either as a major subject or as a part of studies concerned with land and water development or hydrological research. One of the Organization's recent André Mayer fellowships in fisheries has been in the field of water pollution research.

(iii) Training Centers

FAO has organized a number of training centers concerned with agriculture, fisheries, water resources and irrigation, in which the subject of water pollution has been given attention.

4. Conclusion

It is hoped that the above summary of FAO's functions, its concern with and interest in the field of water pollution control and its several consequent activities will provide a clear picture of FAO's present position with respect to this field.

It fully recognizes the necessity for determining and promoting the use of practices which will prevent or control water pollution and welcomes collaboration with other organizations for the purpose of studying or controlling the adverse effects of water pollution with special reference to its effect on water resources and consequently on water supply, agriculture, fisheries and food.

To a considerable extent the activities of FAO and other international organizations with respect to the control of water pollution have until now been confined to the more developed countries of the world. These efforts must be continued and should be prosecuted even more vigorously - especially in the face of the growing output of new waste products, pesticides and agricultural chemicals.

In addition, it is important to achieve early recognition that the rapid urbanization and industrialization of the developing areas of the world hasten the need for initiating measures to prevent recurrence there of many of the same problems confronting the more developed countries. The deleterious effects of water pollution must be brought to the attention of the developing countries. The measures taken to control it must be elaborated, and the necessity for requiring water of good quality for all its manifest uses must be emphasized.

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Howard, Gerald V. and E.R. Godfrey, 1950 — Fishery research and educational institutions in North and South America. Washington, D.C., Food and Agriculture Organization of the United Nations,:x + 85p.

1/ A considerable number of papers concerning water pollution which have been issued by FAO or the collaborating agencies are not mentioned here owing to their ephemeral nature. Many of these have been drafts or working papers.

2/ These suggestions were first transmitted to the member governments of ECE in December 1958. They were presented later (under the same title) to the Fourteenth Session of ECE, Geneva, 1959, as Annex III of ECE document E/ECE/340.

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van der Kerk, J., R. Brunotte and P. Rambeaud, 1962 — Report on the protection of water resources for agriculture against pollution and misuse. FAO:37p. (Mimeo.).

FAO FISHERIES BIOLOGY TECHNICAL PAPER

This is one of a series of Technical Papers (see inside front cover) dealing with various aspects of the work of FAO Fisheries Division, Biology Branch, including the review of pertinent information on particular topics, to meet the requests for assistance, for presentation to technical and scientific meetings, etc. Extra copies can be obtained by application to:

Research Programs Section
Biology Branch, Fisheries Division
FAO, Rome, Italy.

(Papers issued since January 1962)

FB/T14	Handbook on fish culture in the Indo-Pacific Region	February, 1962
FB/T18	Fish farming methods in the Philippines, Indonesia and Hong Kong	March, 1962
FB/T19	World list of periodicals for aquatic sciences and fisheries, Vol. 1 Répertoire mondial de périodiques concernant les sciences aquatiques et la pêche, Vol. 1 Lista mundial de publicaciones periodicas referente a las ciencias acuaticas y a la pesca, Vol. 1	March, 1962
FB/T10(Rev.1)	A world list of experts concerned with the study of the biology of tunas and related species	April, 1962
FB/T20	List of marine research institutes in the tropics (30°N to 30°S)	June, 1962
FB/T7 - Suppl.1	A list of experts concerned with the study of algae - Supplement 1	June, 1962
FB/T16(Rev.1)	A bibliography of research on tunas for the years 1957 - 1961	June, 1962
FB/T21	The effects of current eddies on the distribution of plaice eggs	June, 1962
FB/T24	Fisheries oceanography	July, 1962
FB/T8	The freshwater fishes of Syria and their general biology and management	September, 1962
FB/T22	The influence of temperature on the behaviour of fish	September, 1962
FB/T23	A bibliography of research on tunas for the years 1954 - 1956	September, 1962
FB/T26	Manual of sampling methods for fisheries biology	October, 1962
FB/T27	English translation of convention between the governments of the U.S.S.R. and Japan on deep sea fisheries in the Northwest Pacific (1956)	October, 1962

FB/T25	Current bibliography for aquatic sciences and fisheries Volumes 1 to 3 and 1957 Supplement Subject index (physical oceanography) Volumes 1 à 3 et Supplément 1957 Index par sujet (océanographie physique) Volumenes 1 a 3 y Suplemento de 1957 Indice de materias (oceanografía física)	November, 1962
FB/T28	An international service for retrieving aquatic science literature	November, 1962
FB/T29	Considerations on fishery oceanography	January, 1963
FB/T32	Observación y marcación de ballenas frente a la costa de Chile en 1958 y desde Ecuador hacia las Islas Galapagos y más allá en 1959	Junio, 1963
FB/T33	International collaboration in fisheries research	June, 1963